

Componentized Models as a Service (CMaaS), Phase I

Completed Technology Project (2009 - 2009)



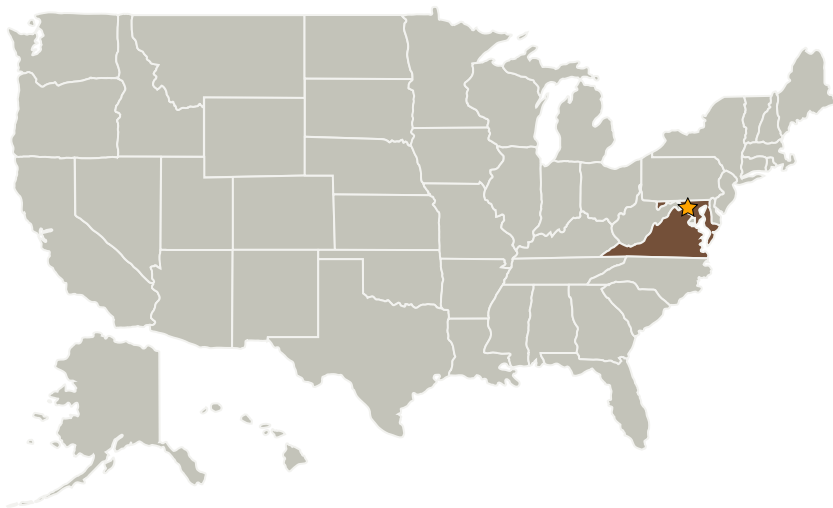
Project Introduction

This Small Business Innovation Research (SBIR) Phase I project, which will conclude with a Technical Readiness Level of 3-4, will demonstrate the feasibility of the Componentized Models as a Service (CMaaS) system, a web-centric software service architecture that will dramatically improve the manner in which NASA's modeling assets are developed, deployed and used. Under this service architecture, models will be exposed as web services that are fully configurable and executable from a browser. Moreover, the software components from which models are comprised will be published as "pluggable" service modules that can be discovered and incorporated into a model at runtime via a novel dynamic build mechanism. Importantly, existing models and components will require little to no modification to be deployed on the service. The project will leverage technologies developed for the Frontier Dashboard, an extant browser interface to and supporting framework for Parabon's commercial grid computing service. Constructed with Google

TM

Web Toolkit (GWT) components, the Frontier Dashboard provides end users with a rich browser interface for managing large-scale computational jobs. Moreover, it provides developers pre-built mechanisms for user authentication and authorization, account management, and accounting, which greatly eases the burdens of creating web service applications.

Primary U.S. Work Locations and Key Partners



Componentized Models as a Service (CMaaS), Phase I

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Componentized Models as a Service (CMaaS), Phase I

Completed Technology Project (2009 - 2009)



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Parabon Computation, Inc.	Supporting Organization	Industry	Reston, Virginia

Primary U.S. Work Locations

Maryland	Virginia
----------	----------

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Steven L Armentrout

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
 - └ TX11.4 Information Processing
 - └ TX11.4.5 Cyber Infrastructure